

**INCHANGE Semiconductor**

**isc RF Product Specification**

**isc Silicon NPN RF Transistor**

**2SC4245**

**DESCRIPTION**

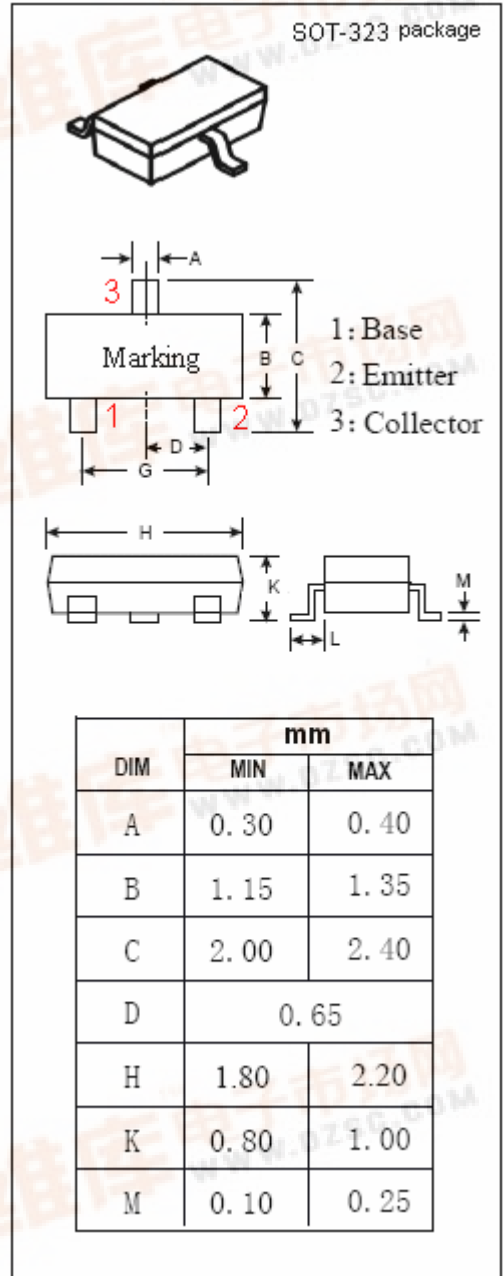
- High Current-Gain Bandwidth Product  
 $f_T = 2400\text{MHz TYP. @ } V_{CE} = 10\text{ V, } I_C = 2\text{ mA}$
- Low Noise

**APPLICATIONS**

- TV tuner , UHF mixer applications
- VHF~UHF band RF amplifier applications

**ABSOLUTE MAXIMUM RATINGS( $T_a=25^\circ\text{C}$ )**

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	30	V
$V_{CEO}$	Collector-Emitter Voltage	15	V
$V_{EBO}$	Emitter-Base Voltage	3	V
$I_C$	Collector Current-Continuous	50	mA
$I_B$	Base Current-Continuous	25	mA
$P_C$	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	0.1	W
$T_J$	Junction Temperature	125	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~125	$^\circ\text{C}$



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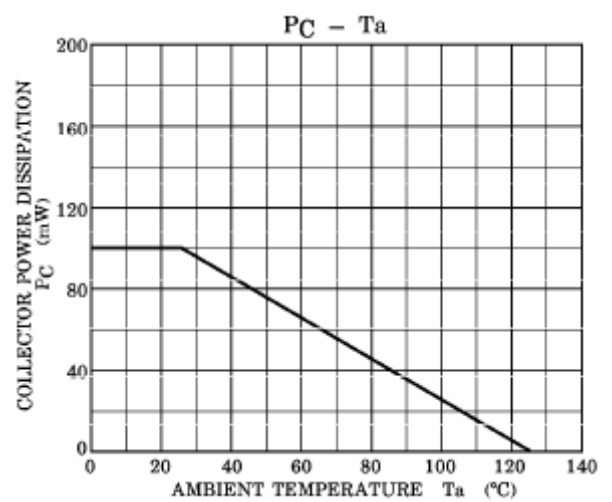
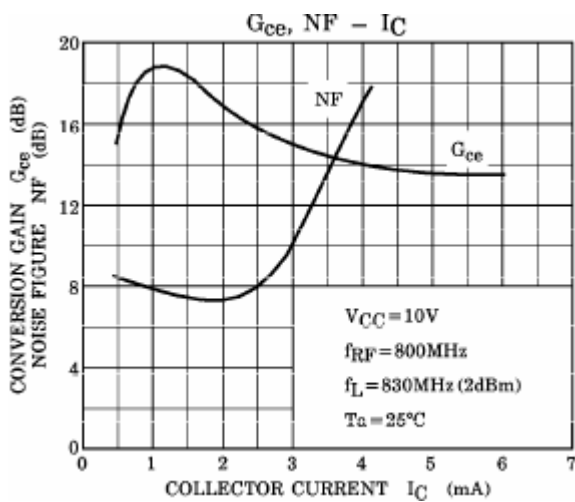
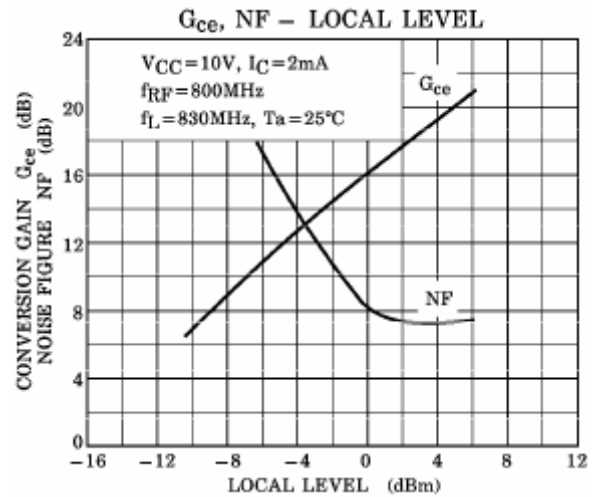
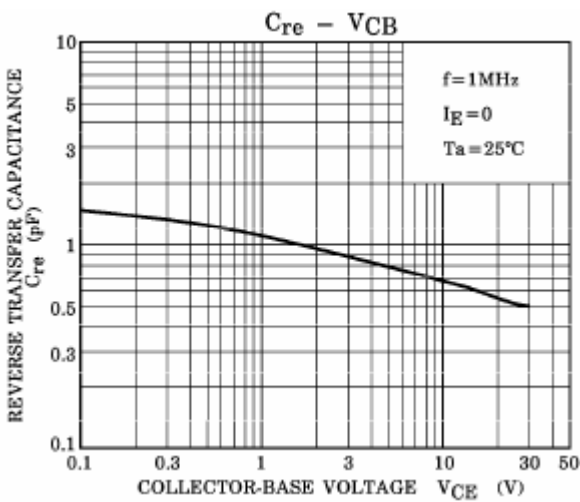
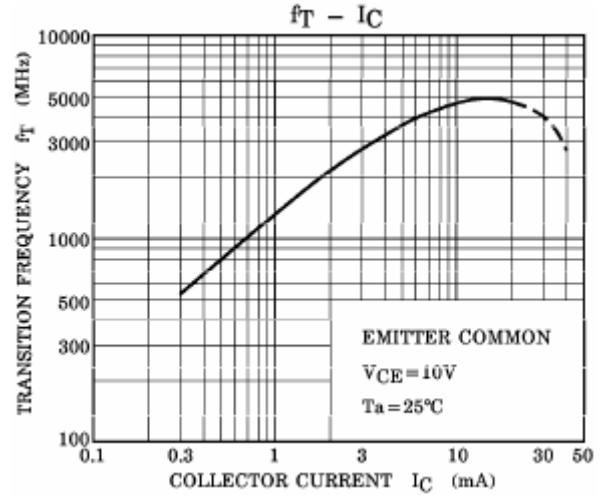
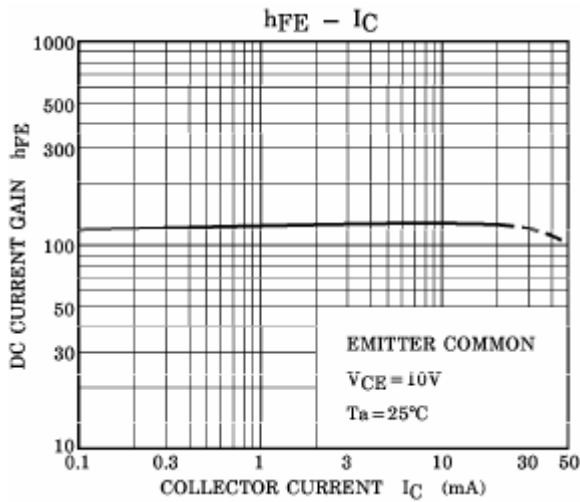
## ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$I_{CBO}$	Collector Cutoff Current	$V_{CB}= 30V; I_E= 0$			0.1	$\mu A$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}= 2V; I_C= 0$			1.0	$\mu A$
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C= 1mA; I_B= 0$	15			V
$h_{FE}$	DC Current Gain	$I_C= 5mA; V_{CE}= 10V$	40		200	
$f_T$	Current-Gain—Bandwidth Product	$I_C= 2mA; V_{CE}= 10V$	1500	2400		MHz
$C_{re}$	Feed-Back Capacitance	$I_E= 0; V_{CB}= 10V; f= 1MHz$		0.6	0.9	pF
$G_{ce}$	Conversion Gain	$I_C= 2mA; V_{CC}= 10V; f= 800MHz$ $f_L= 830MHz(+2dBm)$	12	17		dB
NF	Noise Figure			8	13	dB

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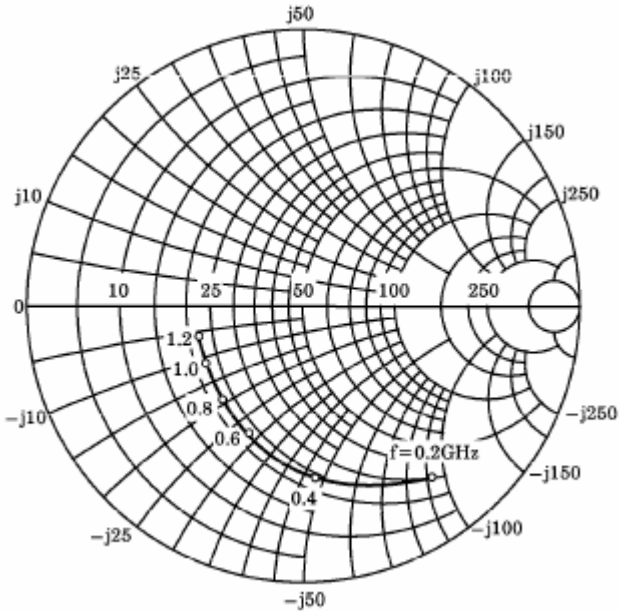
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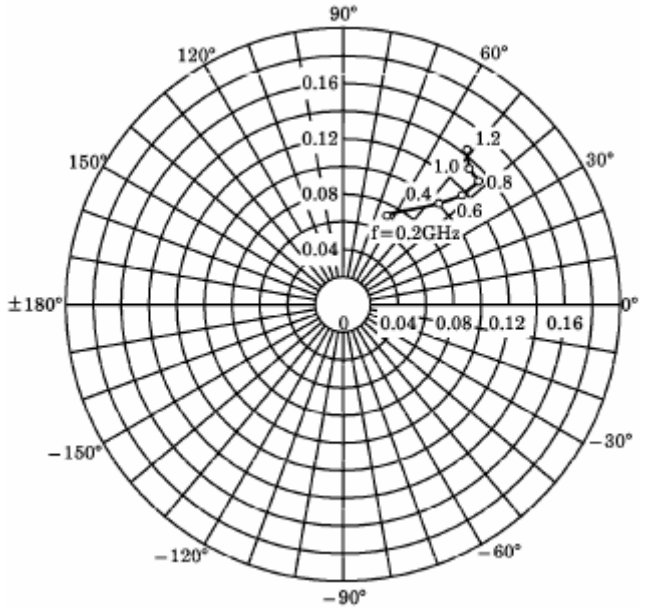
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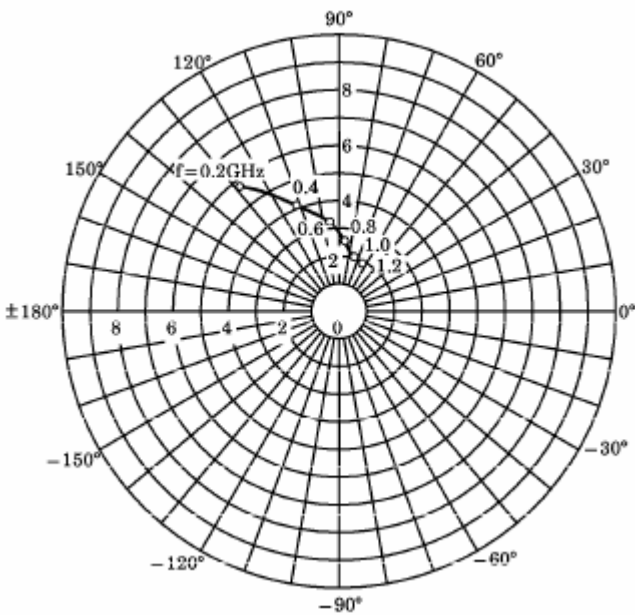
S<sub>11e</sub>  
 V<sub>CE</sub> = 10V  
 I<sub>C</sub> = 2mA  
 T<sub>a</sub> = 25°C  
 (UNIT : Ω)



S<sub>12e</sub>  
 V<sub>CE</sub> = 10V  
 I<sub>C</sub> = 2mA  
 T<sub>a</sub> = 25°C



S<sub>21e</sub>  
 V<sub>CE</sub> = 10V  
 I<sub>C</sub> = 2mA  
 T<sub>a</sub> = 25°C



S<sub>22e</sub>  
 V<sub>CE</sub> = 10V  
 I<sub>C</sub> = 2mA  
 T<sub>a</sub> = 25°C  
 (UNIT : Ω)

